

Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented). A polynucleotide sequence encoding a Human Papillomavirus (HPV) polypeptide having epitopes from at least three Early antigens or fragments thereof from at least two different HPV strains and wherein the polynucleotide has a codon usage coefficient for human genes of greater than 0.4 and less than 1.0
2. (Previously Presented). A polynucleotide as claimed in claim 1 wherein at least one antigen is from HPV E1 or fragment thereof.
3. (Previously Presented). A polynucleotide as claimed in claim 2 wherein at least one antigen is from HPV E2.
4. (Currently Amended). A polynucleotide sequence according to ~~any of claims 1 to 3~~ claim 1 which is a DNA sequence.
5. (Currently Amended). A polynucleotide sequence according to ~~any of claims 1 to 4~~ claim 1 which encodes a HPV polypeptide of a HPV type or sub-type associated with cervical cancer, benign cutaneous warts or genital warts.
6. (Currently Amended). A polynucleotide sequence according to ~~any of claims 1 to 5~~ claim 1 which encodes a HPV polypeptide of one of types 1-4, 6, 7, 10, 11, 16, 18, 26-29, 31, 33, 35, 39, 49, 51, 52, 56, 58, 59 and 68.
7. (Previously Presented). A polynucleotide sequence according to claim 6 which encodes a HPV polypeptide of an HPV type or sub-type which is associated with cervical cancer or genital warts.
8. (Currently Amended). A polynucleotide sequence according to claim 4 ~~or 5~~ which encodes a HPV polypeptide of one of types 6, 11, 16, 18, 33 or 45.
9. (Previously Presented). A polynucleotide sequence according to claim 5 which encodes a HPV polypeptide of a HPV type or sub-type selected from HPV 11, 6a or 6b.

10. (Currently Amended). A polynucleotide sequence according to ~~any preceding~~ claim 1 in which encodes a mutated HPV polypeptide having reduced biological function.
11. (Currently Amended). A polynucleotide sequence according to ~~any of claims 1 to 10~~ claim 1 which encodes a mutated HPV polypeptide comprising one or more point mutations by which one or more of the polypeptide's natural biological functions is inactivated.
12. (Previously Presented). A polynucleotide sequence according to claim 1 comprising an epitope from E1 antigen of HPV 6b an epitope from HPV 6b E2, and an epitope from HPV 11 E2.
13. (Currently Amended). A polynucleotide sequence according to claim 1 ~~to 12~~ having a codon usage coefficient for human genes of greater than 0.5 but less than 1.
14. (Currently Amended). An expression vector comprising a polynucleotide sequence according to ~~any preceding~~ claim 1 operably linked to a control sequence which is capable of providing for the expression of the polynulceotide sequence by a host cell.
15. (Previously Presented). An expression vector according to claim 14 which is p7313PLc.
16. (Currently Amended). A pharmaceutical composition comprising a polynucleotide sequence according to ~~any one of claims 1-13~~ claim 1.
17. (Currently Amended). A pharmaceutical composition comprising a vector according to ~~any one of claims 14-15~~ claim 14.
18. (Currently Amended). A pharmaceutical composition according to claim 16 ~~or claim 17~~ comprising a plurality, gold particles, coated with DNA.
19. (Currently Amended). A pharmaceutical composition according to ~~any one of claims 16, 17 or 18~~ claim 16 further comprising an adjuvant.
20. (Previously Presented). A pharmaceutical composition according to claim 19 in which the adjuvant is encoded as a fusion with the HPV polypeptide encoded by the polynucleotide.

21. (Currently Amended). The use of a polynucleotide according to ~~any one of claims 1-13~~ claim 1 in the treatment or prophylaxis of an HPV infection.
22. (Currently Amended). The use of a vector according to ~~any one of claims 14-15~~ claim 14 in the treatment or prophylaxis of a HPV infection.
23. (Currently Amended). The use of a composition according to ~~any one of claims 18-20~~ claim 18 in the treatment or prophylaxis of an HPV infection.
24. (Currently Amended). The use of a polynucleotide according to ~~any one of claims 1-13~~ claim 1, a vector according to ~~any one of claims 14-15~~ claim 14 or a pharmaceutical composition according to ~~any one of claims 16-20~~ claim 16 in the treatment or prophylaxis of cutaneous (skin) warts, genital warts, atypical squamous cells of undetermined significance (ASCUS), cervical dysplasia, cervical intraepithelial neoplasia (CIN) or cervical cancer.
25. (Currently Amended). A method of treating or preventing HPV infections or any symptoms or diseases associated therewith, comprising administering an effective amount of a polynucleotide according to ~~any one of claims 1-13~~ claim 1, a vector according to ~~any one of claims 14 or 15~~ claim 14 or a pharmaceutical composition according to ~~any one of claims 16-20~~ claim 16.
26. (Currently Amended). A method of treating or preventing HPV infections or any symptoms or diseases associated therewith, comprising administering a pharmaceutical composition according to ~~16-20~~ claim 16 in a prime-boost dosage regime with a recombinant viral vector or non-viral based system comprising a polynucleotide according to ~~any one of claims 1-13~~ claim 1.